DOCUMENT RESUME

ED 450 874 PS 028 962

AUTHOR Schubert, Sandra; Zelinsky, Benjamin
TITLE The Household Detective Primer: Protecting Your Children from Toxins in the Home. CHEC's Guide to Environmental Childproofing.
INSTITUTION Children's Health Environmental Coalition, Princeton, NJ.
SPONS AGENCY W. Alton Jones Foundation, Charlottesville, VA.
PUB DATE 2000-00-00
NOTE 48p.; Also supported by the Wallace Genetic Foundation. Illustrations by Chloe Rose Lattanzi.
AVAILABLE FROM Children's Health Environmental Coalition, P.O. Box 1540, Princeton, NJ 08542; Tel: 609-252-1915; Fax: 609-252-1536; e-mail: chec@checnet.org; Web site: http://www.checnet.org.
PUB TYPE Guides - Non-Classroom (055)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Child Safety; *Children; Home Management; Housework; Parent Materials; *Poisoning; Poisons; *Prevention
IDENTIFIERS *Household Products; Household Risks

ABSTRACT

Designed for parents, this primer presents information on threats to children's health that can be found in every American home, including disinfectants, art supplies, pesticides, and toxins in food and drinking water. The primer also provides practical information on safe and environmentally friendly household cleaners and disinfectants, outlines an approach to controlling pests in the yard and garden without using poisons, and describes safe alternatives to toxic arts and crafts materials. Following an introduction, the primer is presented in five parts: (1) "Household Cleaners, Disinfectants, etc."; (2) "In the Play Area"; (3) "Controlling Pests in the House, Lawn, and Garden"; (4) "Food and Water"; and (5) "Disposal." The primer concludes with a list of organizational and published resources for each section. (KB)

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THE HOUSEHOLD DETECTIVE PRIMER

Protecting your children from toxins in the home

CHEC'S Guide to Environmental Childproofing

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Children's Health Environmental Coalition (CHEC)

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photo by Irene Newton-John

Colette Chuda
Colette died from a non-genetic form of Wilm's tumor at the age of 5.

photo by Gabrielle Raumberger

Pictured left to right:
Sherlock HOMES with CHEC National Spokesperson Olivia Newton-John, and Colette's parents, Nancy and Jim Chuda.

Sherlock is a bloodhound from Elkhand, Missouri. Due to his keen sense of smell, he is the only breed of dog whose testimony is considered evidence in U.S. courts. He is the mascot and the inspiration behind The Household Detective Primer.

THE HOUSEHOLD DETECTIVE PRIMER

Protecting your children from toxins in the home

CHEC'S Guide to Environmental Childproofing

By Sandra Schubert, JD, MA and
Benjamin Zelinsky

Illustrations by
Chloe Rose Lattanzi

Chloe is 14 years old and lives in Southern California. Her best friend Colette died when they were both five years old.

Children's Health Environmental Coalition (CHEC)

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Acknowledgements

Sandra Schubert, JD, MA, Coauthor
Benjamin Zelinsky, Coauthor
Nancy Gould Chuda, Editor
Linda LeStrange, Assistant Editor
Thanks to James Chuda, Olivia Newton-John, Chloe Rose Lattanzi, Lenore Breslauer, Veronica Sinclair, Harvey Neil Karp, MD, Philip J. Landrigan, MD, MSc, Jane Felton, Jill Gaynor, and Elizabeth Hauge Sword for their contributions.

This project was made possible thanks to the generosity of our special friends Kenneth Heitz, Linda Grey, and Alex McKenna. CHEC would also like to thank W. Alton Jones Foundation and the Wallace Genetic Foundation.

A very special thanks to Carrie Cook Platt and Elizabeth Hauge Sword for developing the original idea for The Household Detective.

CHEC's Staff

Nancy Gould Chuda, President/Founder
Elizabeth Hauge Sword, Executive Director
Linda LeStrange, Project Coordinator

To order **The Household Detective Primer**, contact CHEC:
PO Box 1540, Princeton, NJ 08542
Phone: (609) 252-1915, Fax: (609) 252-1536
email: chec@checnet.org
web: www.checnet.org

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CHEC's Mission

The mission of the Children's Health Environmental Coalition is to protect children from the alarming increase in chronic health and developmental problems linked with preventable exposures to toxic substances in homes, schools, and communities.

This book is dedicated to parents, grandparents, and caring citizens who want to make a difference in the health and well being of children, now, and in the future.

To Colette Chuda, Clinton Hill, and Charlie Hays, whose short lives created enduring and purposeful memories.

"One hundred years
from now...
it will not matter
what your bank account was,
the sort of house you lived in,
or the kind of car you drove
...but the world may be different
because you were important
in the life of a child."

Kathy Davis

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Table of Contents

Preface	II
Foreward	III
Introduction How Clean is Clean Enough?	1
■ **Part I** Household Cleaners, Disinfectants, etc	4
■ **Part II** In the Play Area	10
■ **Part III** Controlling Pests in the House, Lawn, and Garden	16
■ **Part IV** Food and Water	24
■ **Part V** Disposal	32
Footnotes	27
Resources	29
Afterward	IV

Preface

The Household Detective Primer is a superb guide for parents. It presents factual information on the threats to children's health that can be found in every American home. In clear, unambiguous language, The Primer talks plainly about the hazards of disinfectants, art supplies, pesticides, and toxins in food and drinking water. It pulls together information on these hazards that previously was widely scattered in diverse publications, which was not easily accessible to parents.

But The Household Detective Primer does more than just give bad news. It also gives parents essential and extremely practical information that they need to protect their children against health threats in the household. For example, it gives information on safe and environmentally friendly household cleaners and disinfectants. It outlines an approach to controlling pests in the yard and garden without poisoning children. It describes safe alternatives to toxic arts and crafts materials. In short, The Household Detective Primer empowers parents by providing information on simple and effective alternatives to toxic chemicals.

As a pediatrician, I recommend The Household Detective Primer to every parent in America. This is a book that parents should buy, read, and keep close for reference. The information in The Household Detective Primer is invaluable. It may be life saving.

Philip J. Landrigan

Philip J. Landrigan, M.D., M.Sc., is the Chair of the Department of Community and Preventive Medicine and Professor of Pediatrics at Mt. Sinai Medical Center in New York City. He is coauthor of the landmark book, Raising Children Toxic Free, as well as being the Senior Advisor to the Administrator of the US EPA for Children's Health and Environment. Previously, he acted as the Chairman for the National Academy of Sciences Committee on Scientific Issues Surrounding the Regulation of Pesticides in the Diets of Infants and Children.

Foreward

The Household Detective Primer is a guide to helping you understand the clear and ever present dangers that exist when children are exposed to toxins in the home. It will help you to understand why certain chemicals are dangerous to you, your children, and your pets, and it will teach you how to replace them with safer alternatives.

Entering the marketplace can be an overwhelming experience for most parents. We strive to keep our homes clean and free from germs, our gardens free from pests, and our household pets free from fleas. As a result, we may purchase products with harmful active and inert ingredients (some which are carcinogenic), and possibly put our children at risk. We can inadvertently expose them to chemicals that affect their sensitive and developing bodies.

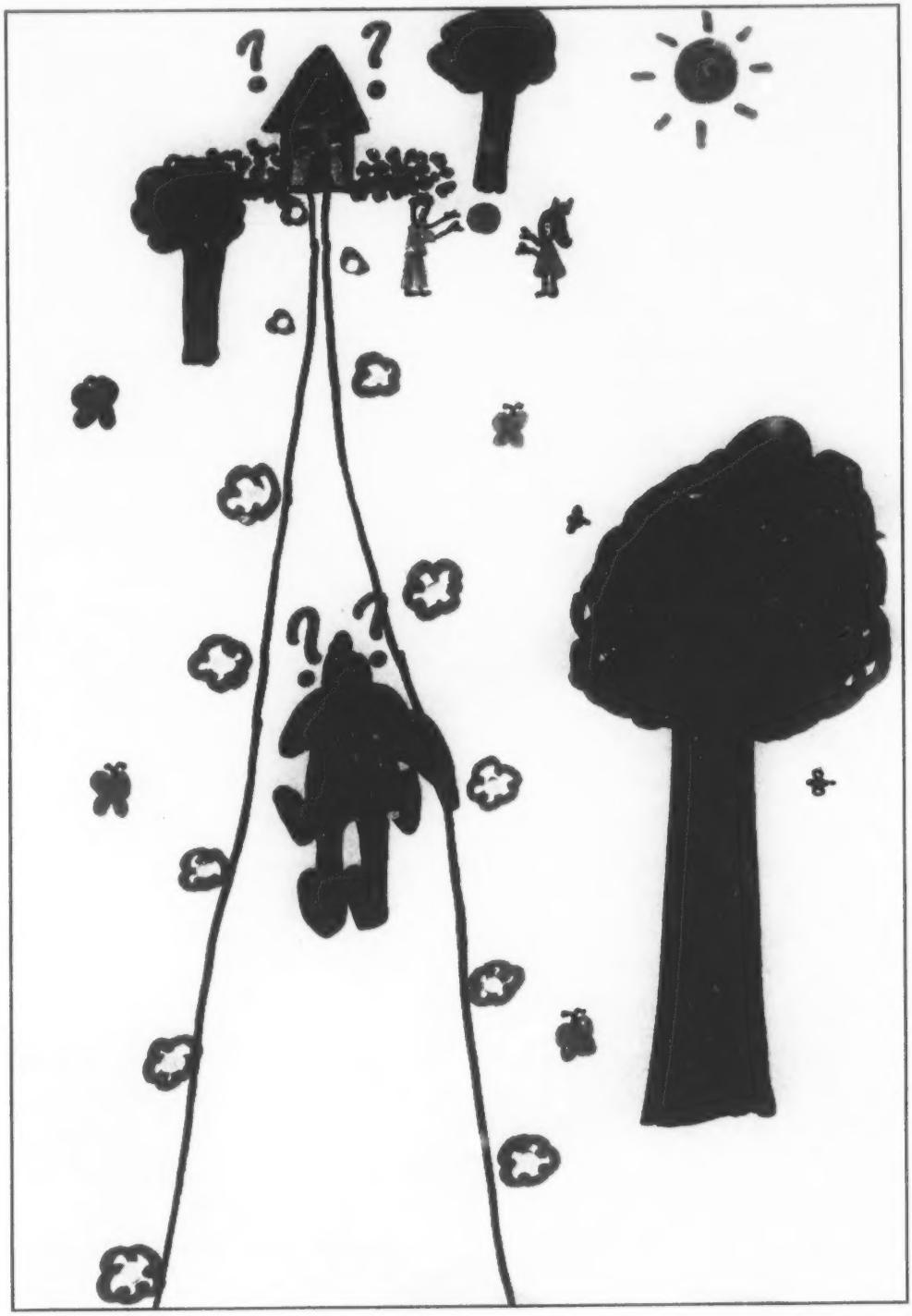
The goal of The Household Detective Primer, tool book, and educational video (video and tool book coming soon!) is to help you make what we refer to as "the conscious connection" each time you enter the marketplace. We urge you not to buy products whose ingredient names you can't pronounce. We ask that you replace them with the alternatives described in this primer.

As parents, we deserve the right-to-know not just what is in the food we eat, the air we breathe, and the water we drink, but also what we are exposing our children to as well. They deserve to be toxic free, and as their parents we can guarantee this by making the right choices. Your children's health and well being now, and in the future, depends on it.

As parents who lost our only child at the age of five to a non-genetic form of cancer, we have dedicated our lives to protecting other children, so that they will not have to suffer Colette's fate.

Nancy and James Chuda

There is no greater pain for a parent than that of losing a child. On April 21, 1991, Jim and Nancy lost their only child, Colette, to a non-genetic form of Wilm's tumor. In her honor, they established The Colette Chuda Environmental Fund (CCEF) to research the link between childhood cancer and the environment. They have turned their pain into a passion -- protecting children and preventing environmental cancers and other illnesses. For this reason, Nancy and Jim formed CHEC, The Children's Health Environmental Coalition.



Introduction
How Clean is Clean Enough?

We do not inherit this land from our ancestors,
we borrow it from our children.

--Chief Seattle, Haida Nation

Our children are our most precious gift. They bring us joy and happiness, and require our tender care and firm protection. In the home we strive to create a haven for them -- a place where they are free to grow and develop to their fullest ability, as well as an environment which is warm and nurturing.

Children Are Uniquely Vulnerable

They are not merely little adults. Their small size and youthful innocence are not much protection against physical and emotional harm. Our instinct is to nurture and protect them. We tell them not to talk to strangers, to look both ways before they cross the street, and never to run with scissors. Yet their vulnerability extends further, even beneath the skin. Children are much more vulnerable to toxins in the environment than their parents.

Children breathe, eat, and drink more per pound of body weight than the average adult, which allows pollutants in the air, food, and water to accumulate to dangerous levels in their bodies. Children's behavior also increases their exposure. Kids play and roll around on the ground and place things in their mouths, increasing their contact with pollutants in dust and dirt.

Unfortunately, children's bodies are less able to cope with, and get rid of, these harmful substances. Because children are still growing, toxic substances which interfere with the body's own chemical signals can lead to developmental disorders and cancer. We see the results of this

heightened susceptibility in rising childhood cancer and soaring childhood asthma rates, much of which is believed to be caused by exposure to environmental pollutants.[1]

We Can Protect Our Children Ourselves

Our government does not protect our children from these risks. Did you know that government standards allow our children to face these risks if the costs to their health and well-being are outweighed by "sufficient" economic benefits? What can we do?

We can control what our children are exposed to within our own homes. The Household Detective Primer will introduce you to some of the simple and effective alternatives to toxic chemicals which are found in common household items such as cleaners and disinfectants, toys and art supplies, pesticides, food, and water. By using certain chemicals to clean, draw, paint, and rid our homes and food of pests, we can inadvertently harm children. Conversely, by avoiding specific types of products and by altering our behavior, we can greatly reduce the presence of toxins in our home. The Household Detective Primer will provide you with the tools you need to make your home, and the planet, a safer place for children.

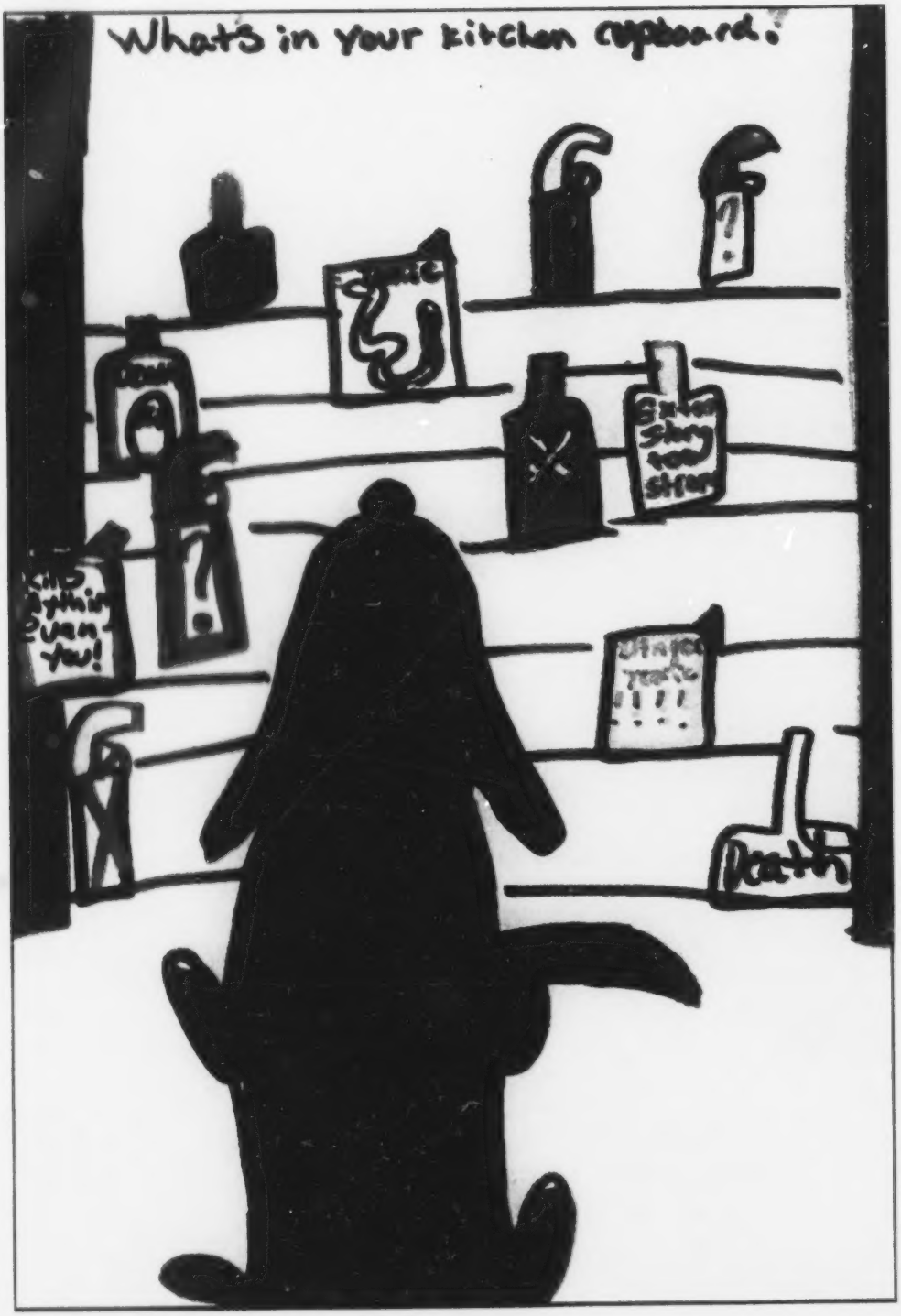
When weighing the various alternatives in this booklet, it is important to remember that our goal is a safe environment for our children. While we want a clean home, we don't want our cleaning product to expose children to possible harm. Instead of measuring the cleanliness of our countertops by their whiteness (often the result of toxic bleaching), let's measure it by the absence of harmful substances. And let's not worry about having a completely pest free lawn. Instead, let's strive for a full and healthy lawn, which will necessarily host a few pests. In the choices we make, we must plan for the long term. Our actions today might limit our children in the future.

We can, and should act today to preserve children's potential and to nurture their growth. The decisions we make every day in our home will help protect our children. By protecting the environment which we bequeath to our children, we simultaneously protect their health, both now and in the future.

So remember, some of the alternatives described in this booklet will work better than their toxic counterparts. Some of them will not work as well. Quite a few of them will cost less. Certainly, all of them work in the best interest of our children's health.

Did You Know?

- Since 1950 at least 75,000 new chemical compounds have been released into the environment through consumer and industrial products and foods.[2]
- The US government has not conducted even basic toxicity testing for 75% of the top-volume chemicals in commercial use.[3]
- Effects of particular concern for children have not been assessed for more than 90% of the largest volume chemicals in commercial use in the U.S.[4]
- Current government regulations and standards are not set at levels that protect children. Current standards are instead based on a fully grown white male.[5]


What's in your kitchen cupboard?

Part I
Household Cleaners, Disinfectants, etc.

People have learned to keep their houses clean in order to ward off disease and infection. To accomplish this task, we have created a wide variety of cleaning products and disinfectants. Today, the cleaner is frequently more dangerous than the things we are trying to clean up. Many common household products contain alcohols, ammonia, bleach, formaldehyde, and lye.[6] These substances can cause nausea, vomiting, inflammation and burning of the eyes, nose, throat, and respiratory system, and are linked with neurological, liver and kidney damage, blindness, asthma, and cancer.[7]

Fortunately, we can achieve a level of cleanliness which is both hygienic for children as well as aesthetically pleasing for adults without using hazardous household cleaners and disinfectants. You can either make your own household cleaners and disinfectants from a variety of common, less toxic household ingredients, or you can purchase less toxic commercial brands in stores. In addition to making your child's environment safer, most of these less toxic alternatives will also save you money.

Did You Know?

- The average American home has 3-10 gallons of hazardous materials.[8]
- In 1993, 1.8 million human poisonings were reported to the poison control centers in the US. Ninety-two percent of the incidences took place in the home and 60% of the cases involved children under the age of five.[9]

What You Can Do

First, remember what you're trying to do -- make your home hygienic and safe for your children. This means effectively cleaning up food from counters and getting dirt off of your floors. So, when choosing a cleaning or disinfecting product, ask yourself, is my child going to be at greater risk from some unknown germ or from a chemical known to harm people?

Homemade Remedies and Cleaners

Air Freshener

To absorb odors, place bowls of vinegar, or baking soda around the house. Be sure to keep them out of the reach of children and pets! To make the air more fragrant, use essential oils or boiled herbs. To make boiled herbs, simply choose any herb or spice the smell of which you enjoy and boil it in water for a few minutes until the heat causes it to release its odor. Let it cool a little and put it out in a bowl. You can also add salt to discourage the growth of fungus.

Drain Cleaner

Use hair and food traps to keep the drain from getting clogged. If it does become clogged, try the following recipe. First, pour about 1/2 cup of baking soda down the sink. Then add at least a cup of vinegar. It will start to fizz. Put the cover over the drain. Finish up by rinsing the drain with a mixture of boiling water and salt. You might have to repeat the whole procedure more than once.

Toilet Bowl Cleaner

Sprinkle baking soda around the inside of the toilet bowl and then clean with a toilet brush. Also try letting white vinegar sit for a few minutes in the bowl before cleaning with the toilet brush.

Oven Cleaner

Make a paste of baking soda and water. First wipe away any residual grease. Then scratch off burnt spots with a scouring brush or steel wool. Finally, apply the paste and scrub.

Laundry Detergents

By adding baking soda, you can reduce the amount of commercial detergent you use substantially. If you're using liquid detergent, add about 1/2 cup of baking soda at the beginning of the wash. If you're using powdered detergent, add 1/2 cup of baking soda during the rinse cycle. Baking soda softens the water, thus increasing the potency of your detergent. When buying your commercial detergent, it is better to use a biodegradable, less toxic, phosphate free brand (keep reading for recommendations).

Window Cleaner
Put 3 tbs. vinegar per 1 qt. water in a spray bottle.

Automatic Dishwashing Detergent
As you pile your dishes up in the sink, sprinkle them with baking soda. Then, later on when you put them in the dishwasher you can use a lot less commercial detergent. It's the same basic idea as with the laundry detergent.

Carpet Cleaner
To absorb big spills, spread cornmeal all over the spill. Wait about 15 minutes. Then vacuum it up. For stains, put $^1/_4$ cup biodegradable liquid soap with $^1/_3$ cup water into a blender to make a foam. Put the foam on the stain and rub. Finish up with a splash of vinegar.

Kitchen Cleanser
Use baking soda on non-scratch surfaces. Use a vinegar and water mixture (1/2 cup water, 2 tbs. vinegar) on other surfaces.

Tub and Tile Cleaner
Mix $1^2/_3$ cup baking soda, $^1/_2$ cup liquid soap, $^1/_2$ cup water, and finally, 2 tbs. vinegar (if you add the vinegar too early it will react with the baking soda). Then apply, wipe, and scrub.

Shoe Polish
Use a little olive oil.

Disinfectant
Make a solution of 3 tbs. liquid soap, 2 cups water, and 20-30 drops of tea tree oil, which is a natural disinfectant.

Brass and Copper
Cut a lemon in half, sprinkle it with salt and rub the lemon on whatever needs to be polished. Buff with a cloth to remove excess lemon juice.

Silver
Put a sheet of aluminum foil into a plastic or glass bowl. Sprinkle the foil with salt and baking soda. Then fill the bowl with warm water. Just soak your silver in the bowl and the tarnish will migrate to the aluminum foil. Finally, dry and buff your silver.

Fabric Softener
Add 2 cups white vinegar and a few drops of an essential oil to your rinse cycle. WARNING! Vinegar can cause colors to fade a little.

Fragrance
If you are not chemically sensitive or allergic, essential plant oils can be a pleasing addition to homemade cleaners. A few drops of these fragrant oils can enhance our perception of cleanliness.

Commercial Cleaners and Disinfectants
If you don't feel like making your own cleaners, there are a number of less toxic alternatives which can be found at organic and natural grocery stores, co-ops, and many larger conventional stores as well. Examples include *Ecover, Earth's Best, Seventh Generation, Earthrite, Earth Friendly, Bio Kleen, Life Tree,* and *Dr. Bronner's.* Reading the label is always a good way to familiarize yourself with the substances in a product.

Organic and biodegradable products are generally the safest. Natural products tend to be the next safest, with conventional cleaners and disinfectants being the least safe.

WARNING
Storage of Cleaners and Disinfectants
Whatever you choose to do, whether it be making your own cleaners or purchasing them in stores, remember that many products can be harmful to children and pets if ingested, even baking soda and vinegar. So, **remember to keep all cleaners and disinfectants safely out of the reach of children.**

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Part II
In the Play Area

The play area is a place of joy, discovery, and fun. It is a place where our children create and learn. It is vital that we keep this place safe for kids.

The problem is that some play items contain hazardous materials. In particular, some art supplies and some types of plastic toys can pose a threat to your child's health. In both cases the existing government regulations don't protect children sufficiently. Presently, there are a number of people working both inside and outside government to improve this situation. In the meantime, here is some information which will help you make healthy decisions for your child.

Art Supplies

Art supplies may contain solvents, asbestos, lead, and cadmium. If chemicals from these products are inhaled, absorbed through the skin, or swallowed by children, the effects can range from headaches or nausea, to neurological disorders, cancer, and death.[10] Fortunately, alternatives to toxic art supplies abound.

Did You Know?

- A study has shown that children are more likely to get leukemia if their father works with dyes, spray paints or pigments. This study did not look at mothers.[11]
- A study by The National Cancer Institute has shown that male artists are more likely than the general population to get a number of different types of cancers, including brain, kidney, bladder, colon, rectal, and leukemia.[12]

What You Can Do

- Do not use old or donated materials with unknown ingredients.
- Check the label of the art products you buy.
- The Federal Hazardous Substances Act of 1960 requires

manufacturers to use the labels, DANGER, WARNING, or CAUTION whenever a product causes immediate sickness or death. Long term health effects are not taken into account.

- *The Art and Creative Materials Institute* (ACMI) created a labeling system designed to protect artists from long term health effects. In their system, *Health Label Nontoxic, Approved Product Nontoxic (AP),* and *Certified Product Nontoxic (CP)* denote a product as safe for preschoolers on up. The CP designation also means that the product meets certain performance standards. About 85-90% of the art supply manufacturers in the United States are members of ACMI.[13]
- Make sure there is adequate ventilation at your work space. Open a window and/or use a fan to disperse the fumes.
- Avoid using aerosol spray cans and air brushes.
- Use water-based rather than solvent-based products.
- Avoid products which smell like food, kids will try to eat them.
- Avoid artists' pastels. Many contain asbestos, contaminated talc, lead, and cadmium pigments.
- Avoid permanent felt tip pens. Crayons, pencils, dustless chalk, dustless pastels, and poster paints are a better option.
- Use vegetable and plant dyes instead of cold water, fiber reactive, or commercial dyes.
- Use white glue or school paste in place of airplane, epoxy, and instant bonding glues.
- Don't permit eating around art materials!
- Be sure to wash up after using art materials, especially before eating.
- Vacuum or wet mop dust from your art work. Sweeping could inadvertently stir up toxic dust.
- If you are not sure what something is made of, call the manufacturer and ask for a material safety data sheet (MSDS). They are legally obligated to provide you with this information.

- Keep dangerous materials out of reach of children and make sure toxins are clearly labeled.

Toys

Unfortunately, very little is known as of yet about toxins in children's toys. The research done so far has shown that in at least some cases, there is cause for concern. The Danish government concluded that children can ingest dangerous levels of lead from toys made with *polyvinyl chloride* (PVC) plastic, and subsequently proposed a ban on such toxic toys throughout the EU.

A study in the US found that 21%, or one in five, of the vinyl plastic products tested were contaminated with lead and cadmium.[15] These products ranged from backpacks to toys to raincoats to video game components. Eighteen percent of the products tested contained lead which exceeded the amount determined to be dangerous by the *Consumer Products Safety Commission*, and over 80% violated levels requiring consumer warning labels under California law.[16] Every product that contained lead also contained cadmium, and some of the contaminated products are things which are commonly chewed on by young children. To make matters worse, children are a marketing target for these products which often feature popular children's icons.[17]

Exposure to these substances is dangerous to your child. Lead can decrease intelligence and damage the nervous system at low levels of exposure.[18] Cadmium can damage the kidneys and is a known carcinogen.[19] However, there are steps that you can take today to reduce your child's exposure to these products.

Did You Know?

- Presently, there are alternatives to all consumer uses of polyvinyl chloride (PVC) plastic.[20]
- According to a recent nationwide survey, 900,000 American children aged one to five have blood lead levels higher than the *Center for Disease Control and Prevention's* level of concern.[21]
- Cadmium is not regulated by the *Consumer Products Safety Commission*, although it is a known toxin.[22]

What You Can Do

- Avoid plastic toys which are known to be contaminated with lead or cadmium. For a list of contaminated products, contact *CHEC* or *Greenpeace* (see Resources).
- Until public and government awareness of contaminated vinyl toys increases, we will continue to lack adequate warning labels. There is very little information available regarding which vinyl plastic products are contaminated and which are not. In the mean time, be wary of vinyl plastic toys which are likely to include PVC.
- Contact both your government and toy stores and tell them that you won't accept toxins in children's toys. Contact *CHEC* and *Greenpeace* for a specific list of who to talk to.
- Don't give your child painted antique toys. The paint on such toys often contains lead.

Part III
Controlling Pests in the House, Lawn, and Garden

Often, the first chance a child has to play outside, they are in a garden or on a lawn. However, in order to keep these places beautiful and green, we resort to using pesticides. About 90% of Americans use pesticides,[23] in high volume, which total approximately 2 billion pounds a year.[24] Unfortunately, pesticides can cause all sorts of children's health problems. Immediate effects include nausea, vomiting, seizures, and shortness of breath.[25] Long term effects include neurological and reproductive disorders, birth defects, asthma, and cancer.[26]

These problems are preventable. We can easily remove pesticides from our homes, both indoors and outdoors. Using a number of simple strategies, we can have beautiful lawns and gardens, and relatively pest free homes without endangering our children.

Did You Know?

- Children in families that use pesticides are 6.5 times more likely to get childhood leukemia.[27]
- There is a correlation between the use of pesticides in the home and childhood brain cancer.[28]
- Twenty-four out of the 25 most common pests are only problems because their natural predators have been killed by pesticides.[29]
- Nationwide, 47% of households with children under the age of five were found to store at least one pesticide within the reach of children.[30]

What You Can Do

An *Integrated Pest Management (IPM)* approach is the safest way to control pests. IPM is a sequential process based on monitoring, prevention, mechanical and biological controls. In IPM you start with the least toxic step and proceed to the next step, only if the first doesn't control the pest problem.

24

IPM Steps

1) Monitor the situation.

Identify the causes of the problem. Determine what pests eat, where they are coming from, and what kind of organism you are trying to control.

2) Preventive medicine.

The best way to get rid of pests is to not attract them in the first place.

- Cleaning up after yourself, shutting windows, and taking out the trash regularly are the keys to keeping pests out of the house.
- Just like with people, a healthy plant is less likely to get sick or be preyed upon than a weak plant. Plants have defense systems just like animals. Encourage your plants to protect themselves by keeping them strong and healthy.
- Water appropriately. Be sure to take into account your specific climate. In general, try to water in the evening, anywhere from 4:00 to 9:00 pm depending upon where you live. In addition to conserving water, this keeps plants from getting burnt by the noon sun which reflects off the water, or from getting stressed by cold if watered at night. In order to save yourself time and to stimulate root growth in your plants, water less frequently but for longer duration. Fungus growing on your plants is a sure sign that you are over-watering.

3) Mechanical controls.

If preventive medicine alone isn't enough, then try some of these techniques.

- Get down and dirty. Weed by hand. It is a small sacrifice compared to the health risks of weeding by spray bottle. You might even grow to like it.
- Use mechanical traps to capture pests. Live traps are a good alternative.

4) Biological controls.

If the pests still won't give in, try recruiting some allies from the natural world.

- Attract beneficial insects. Some insects such as praying mantis and

ladybugs will eat the bugs that eat your plants. You can encourage their presence by not using pesticides which indiscriminately kill both good and bad bugs (they aren't good for kids either) and by planting beneficial plant species. Plants such as daisies, sunflowers, marigolds, dill, and fennel attract beneficial insects by providing them with food and a place to lay their eggs.

- If all the previous options fail, it may be helpful to directly add biological control such as beneficial insects, nematodes, and pathogens. These techniques should be used sparingly in specific circumstances and under the supervision of a professional; other wise they can do more damage than good.

5) Least Toxic Chemical Controls.
When all else fails, it is useful to turn to least toxic chemical controls.

- Boric acid is a useful way of controlling ants, cockroaches, grain weevils, and beetles, as well as many weeds. Although boric acid is much less toxic than conventional pesticides, it still presents some health risks. For this reason, use it sparingly and be sure to keep it away from children.

- Sticky traps which attract insects with pheromones can be very effective. However, be careful because some sticky traps use conventional toxic pesticides.

- Numerous other least toxic chemical controls exist, including diatomaceous earth, soaps, oils, and growth regulators. When considering these least toxic chemicals, be sure to check out all the potential health risks. Use these chemicals only if the previous steps don't work, and be sure to use appropriate strategies for the specific type of pest you are dealing with. Be as specific as possible.

Special Tips for Gardens

- **Use lots of organic fertilizer,** especially compost. Compost is mother nature's primary fertilizer choice. Compost is a living system of microbes and decaying organic matter. As microbes continually break down the organic matter, important nutrients are released slowly and steadily to be used by the plants. The glue-like waste products of these microbes create a porous soil which holds

more air and water, helping your plants to breathe and drink.

- **Don't plant in rows.** Plant with equal space in every direction. Rows were invented to ease the harvesting of really big crops. In your own backyard this is less relevant. Try growing your plants equally distant from one another in all directions. This helps exclude many invasive weeds. Additionally, this creates a microclimate which keeps heat in and retains moisture, the combination of which stimulates robust plant growth.
- **Use plants suitable to your specific region.** Buy seed (preferably organic) from a company that harvests seed locally. These seeds have been selected for their performance within the specific requirements of your local environment.
- **Use nature's tricks**. Plants have their own pesticides, such as caffeine and nicotine. Place some chewing tobacco or coffee grounds in your watering can to make a less toxic pesticidal tea. Apply generously whenever you water.
- **Slugs.** To get rid of slugs, put out a pan of beer. Slugs will drown of their own accord.

Special Tips for Lawns

- Use a variety of grass suited to your local area. Call your county extension service to find out which variety of grass would be most appropriate.
- Reduce soil compaction. To aerate your soil use earthworms and a garden fork. For bigger jobs, rent an aerating machine.
- Remove thatch build up. Thatch is the layer of decomposing roots, leaves, and stems at the surface of the soil. Removing this layer allows water and fertilizer to penetrate down to the roots where they are most needed. Use a thatching rake or for big jobs, rent a thatching machine. It is most strategic to do this in the spring or fall when the grass grows back quickly.
- Mow frequently, but lightly. Mowing too low to the ground reduces the amount of green in a lawn, which reduces its ability to produce food. Mowing too low also causes a lawn to dry out. Finally, be sure to use a sharp blade to reduce the stress on the grass.

Special Tips for the House

Cockroaches
Keep food in airtight containers and block potential cockroach entry ways. Plug cracks around baseboards, walls, pipes, sinks, and bathtubs. Repair leaky pipes and faucets. Try to reduce the amount of standing water in your house and don't leave soap bars out. Roaches are attracted to both. If these preventive measures fail, try using a least toxic chemical control -- use a sticky trap or put a light dusting of boric acid behind and under the fridge, stove, and ductwork and in or along cracks and crevices. Be sure that your kids don't have access to these areas, as boric acid can be harmful to children upon dermal contact and hand-to-mouth ingestion and therefore, should be kept out of their reach.

Ants
Locate the place of entry and squeeze some lemon juice on it. Leave the peel at the entrance. Ants will also be repelled by chalk, talcum powder, and coffee grounds. As with cockroaches, plugging cracks, holes, and water leaks is a good preventive measure.

Flies
Sunny, open windows are a fly's entry way to your house. So close your windows before it gets sunny. Also try making your own fly paper with yellow paper and honey. Good old fashioned fly swatters work well too.

Spiders
Don't kill spiders. They are the good guys -- exterminators at a reasonable hourly rate.

Fleas.
If your pets are infested, wash them well with soap and warm water, and comb them regularly with a flea comb, disposing of the fleas in lightly soapy water. Vacuum your house and wash your pet's bedding at least every two weeks, before the eggs have time to hatch. Empty your vacuum bag regularly to prevent eggs hatching in your house.

If you're really ambitious, don't declare nuclear war on the fleas with pesticides; rather practice guerrilla warfare by using the following acrobatic technique. Place bowls of lightly soapy water around your house. Then put on a pair of white socks and walk around. The fleas, attracted

to your body's heat, will jump on your feet. Pluck them off and drop them in the water.

Diatomaceous earth, available at garden supply stores, is the fossilized remains of the diatom, a single celled aquatic plant that lived some 20 million years ago. It makes an excellent flea powder.

As a last resort, sprinkle diatomaceous earth sparingly into the carpet. Let set for one hour and then vacuum it up. Wear a mask to prevent breathing in the dust. The diatomaceous earth will cause the fleas to dry up and die off.

Diatomaceous earth can also be used to kill house and garden pests. It can be placed in crevices in the home and is effective as long as insects crawl through it.

Insect Repellent

Sponge on or spray the following herbal rinse:

2 tbs. rosemary
1/2 pint boiling water
Steep the rosemary for 20 minutes, strain, allow to cool, then apply the liquid.

Part IV
Food and Water

Everyone has to eat and drink. It is essential to life itself. In fact, a good meal is one of our greatest pleasures. Unfortunately, a lot of toxic substances sneak into children's bodies hidden in food and water. Examples include pesticides, harmful bacteria, industrial discharges, and agricultural runoff. These substances are present at levels that can be harmful to our children in a number of ways.

Some of these substances, like the food additives monosodium glutamate (MSG) and aspartame, have been associated with nerve damage, cancer, and developmental problems.[31] Some types of seafood, including predatory fish (such as swordfish), and filter and bottom feeders (such as shellfish and halibut), accumulate pollutants to a degree which can cause kidney damage, mental impairment, and cancer.[32] In general, the pesticides that can be found on food or in drinking water, cause the same types of health problems that the pesticides on your lawn do (see above).

There have also been cases of drinking water, particularly well-water, being contaminated with asbestos, radon, lead, and various solvents. These water pollutants can cause damage to the brain, nervous system, kidneys, and liver and can cause a number of different cancers.[33]

Children's bodies can be seriously affected by even low levels of toxins in food and water. Of course, we still have to eat and drink. In fact, it would be very damaging to deprive a kid of all the nutrition in fruits and vegetables or to not give them enough to drink. Luckily, you don't have to make a choice between nutrition and toxins. There are lots of ways to get good, clean food and water.

Food
Did You Know?

- Sixteen different pesticide residues were found in 8 brand name baby foods. These pesticides have been implicated in cancer and nerve disorders.[34]

- The *Food and Drug Administration* (FDA) only inspects 9 pounds out of every 1 million pounds of fish.[35]
- *Nitrite*, a preservative found in approximately 7% of our food, reacts with chemicals in food to make nitrosamine, one of the most potent known carcinogens.[36]
- An average one-year-old's top ten favorite foods are apple juice, grape juice, oats, bananas, milk, apples, orange juice, pears, wheat, and peaches. On average, 50% of these foods will have pesticide residues.[37]
- Infants consume 15 times the apple juice, 12 times the pears, and 8 times the carrots that adults do per unit of body weight.[38]

What You Can Do

- Thoroughly wash and peel your produce, especially if it is waxed and dyed. Discard outer leaves of lettuce. This reduces but does not completely remove pesticides.
- Beware of perfect looking produce; it often requires the use of pesticides to make it appear so aesthetically pleasing.
- Eat organic foods.
- Eat foods which are low in fat and trim the fat from meat, fish, and poultry -- many toxins are stored in fat cells.
- Beware of meat low down in the food chain and meat from filter feeders, i.e. swordfish and shark or oysters and mussels -- toxins accumulate in these organisms.
- Don't pick wild berries from public roads where pesticides are often sprayed.
- Buy seasonal, local produce, such as can be found at farmer's markets and local co-ops.
- Shop at organic grocery stores or local organic co-ops. Some large organic chains include *Whole Foods, Wild Oats, Nature's Northwest, Fresh Fields,* and *Bread and Circus.* Also, conventional stores often carry organic products. If your store doesn't carry organic products, let them know that you want them to.

- Join *Community Supported Agriculture*, or similar groups which will supply you with organic produce in exchange for buying a share of their farm (see below).
- Take part in an organic community garden in your neighborhood.
- Even better, grow your own food using organic sustainable techniques.

Baby Food

Perhaps most frightening to many parents is the thought that pesticides might be in their infant's food. Unfortunately, many baby foods do contain pesticides. There are lots of safe alternatives though.

What You Can Do

- Buy organic baby foods. Earth's Best baby food is available in many large grocery store chains. Organic grocery stores and co-ops usually have a couple of different options, including *Organic Baby*.
- Make your own baby food using organic produce. Be sure to consider the quality of your water source.
- Some manufacturers such as *H. J. Heinz*, will no longer use produce with residues from chemicals not yet reviewed for their safety by the EPA. In addition, *Gerber Products Co.* has made a commitment to prevent the use of genetically engineered foods and to eliminate produce containing pesticide residues, in the manufacture of their products.
- Write your baby food company and ask them to use organic produce.
- Tell your grocer you want them to carry organic baby foods.

Water

Did You Know?

- The EPA estimates that 10% of our community drinking water contains pesticides.[39]
- In 1994 and 1995, according to the *Environmental Protection Agency*, 45 million Americans drank water from systems that fell short of *Safe Drinking Water Act* standards.[40]

What You Can Do
Find Out What's In Your Water

- Ask your public water distributor. Most of us get our water from a public distributor. They are required by law to give you information on what is in your drinking water. In fact, since 1999, they have been required to send this information to everyone living in their water district.

- Ask the *Environmental Protection Agency* or your local public health department. Many people use well water. If you do, you may be able to get information on what is in your water from either the EPA or a local public health office.

- Get it tested yourself. If you still can't get the information you need, hire someone to do a water test for you. You need different types of tests for different types of water pollution. One convenient option is to get your water tested by mail (see Resources).

If Your Water Isn't Up to Your Standards

Use filtration systems. More economical long term than bottled water, using filtering systems guarantees a level of control over what you are drinking that the other options do not. There are many different types of filters in a wide price range. Each type of filtration device has a different specialty. Depending on the results of your water test, use one of the following:

Activated Carbon System
-removes organic chemicals and chlorine. It also makes water taste better. It's not effective for water that contains lead or nitrate.

Distillation System
-is useful for removing heavy metals, but does a poor job of removing small, organic compounds.

Reverse Osmosis System
-removes metals, fluoride, nitrates, radium, and lead, but not all organics.

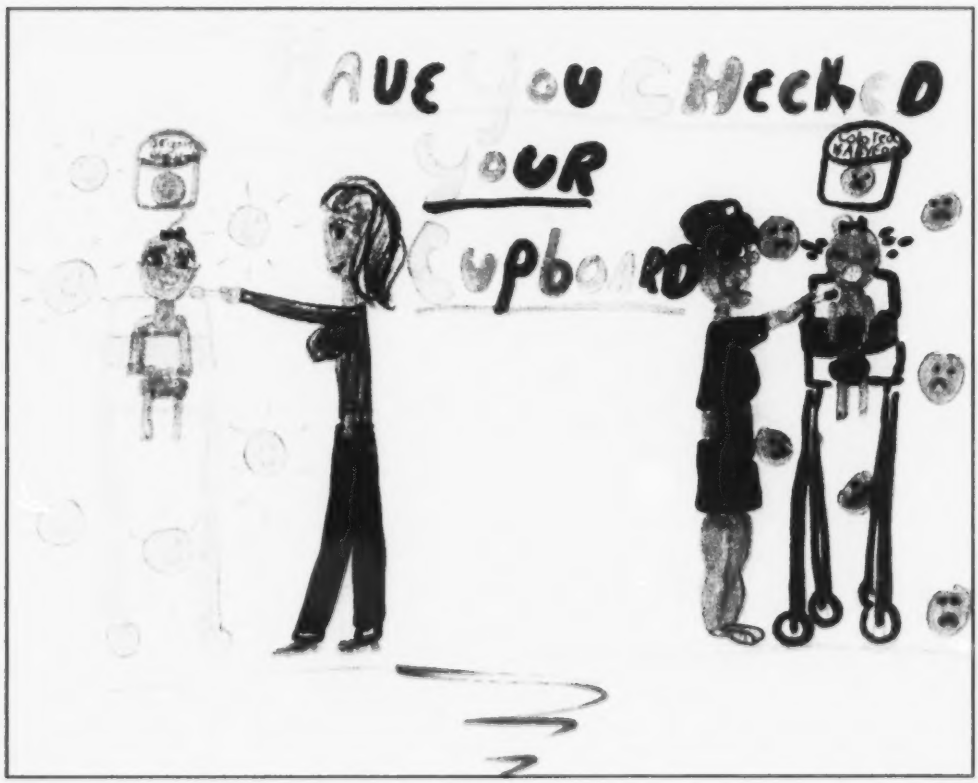
Hybrid System
-uses a combination of the above techniques for more comprehensive filtration.

Bottled Water

For a guide to the best and worst brands, begin with *Consumer Reports (January 1987)* or contact the *National Sanitation Foundation* (see Resources).

Protect Your Watershed

Fortunately, you are already doing this by using The Household Detective Primer. By using less toxic alternatives, you are keeping toxins from entering your groundwater. Household toxins which are thrown in the garbage will often leak out of landfills when it rains. Most everything we use ends up in the water system one way or another and then the polluted water makes its way back into our homes. Protect your children and other parent's children, by not using pesticides, toxic cleaners, etc. Share with other parents how their practices affect the quality of water entering your house.



Part V
Disposal

So you decided to make the switch to less toxic alternatives at home. Now what are you supposed to do with all those left over chemicals? It is vital to dispose of household hazardous waste appropriately. If toxins are dumped in the trash they will eventually leak out of landfills and end up in our water. To find out where the nearest disposal service is, call the *Resource Conservation Recovery Act/Underground Storage Tank, Superfund, Emergency Planning*, and *Community Right-to-Know Act Hotline* (RCRA/UST, Superfund and EPCRA) at 1-800-424-9346, or check the government pages of your phone book.

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Resources

Part 1: Household Organizations/Companies

Children's Health Environmental Coalition (CHEC)
PO Box 1540
Princeton, NJ 08542
(609) 252-1915
fax: (609) 252-1536
email: chec@checnet.org
www.checnet.org

Citizens for a Better Environment
407 S. Dearborn, Suite 1775
Chicago, IL 60605
(312) 939-1530
fax: (312) 939-2536
ilcbe@igc.org
www.cbemw.org

Environmental Hazards Management Institute (EHMI)
PO Box 932
10 Newmarket Rd.
Durham, NH 03824
(603) 868-1496
fax: (603) 868-1547
www.ehmi.org

Environmental Health Coalition
1844 Third Avenue
San Diego, CA 92101
(619) 235-0281
fax: (619) 232-6370
ehcoalition@igc.apc.org
www.environmentalhealth.org

Frontier Herbs
2264 Market St.
San Francisco, CA 94114
(800) 786-1388
fax: (800) 729-5422

Washington Toxins Coalition
4516 University Way, NE
Seattle, WA 98105
(206) 632-1545
fax: (206) 632-8661
info@watoxics.org
www.watoxics.org

Publications

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Dadd, Debra Lynn, *The Non-toxic Home*, J.P. Archer, 1986.
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Logan, Karen, Clean House, Clean Planet: *Clean Your House for a Day the Safe Non-Toxic Way*, Pocket Books, 1997.

Part II : In the Play Area
Organizations/Companies

Alliance to End Childhood Lead Poisoning
227 Massachusetts Ave., NE, Suite 200
Washington, DC 20002
(202) 543-1147
fax: (202) 543-4466
aeclp@aeclp.org
www.aeclp.org

Art and Creative Materials Institute (ACMI)
100 Boylston St., Suite 1050
Boston, MA 02116
(617) 426-6400
fax: (617) 426-6639
acmi@guildassoc.com

Environmental Health Center
A Division of the National Safety Council
1025 Connecticut Ave., NW, Suite 1200
Washington, DC 20036
(202) 293-2270
fax: (202) 293 0032
ehc@nsc.org
www.nsc.org/ehc.htm

Greenpeace USA
1436 U St., NW
Washington, DC 20009
(202) 462-1177
fax: (202) 293-2270
www.greenpeace.org

Natural Resources Defense Council (NRDC)
40 West 20th St.
New York, NY 10011
(212) 727-2700
fax: (212) 727-1773
nrdcinfo@nrdc.org
www.nrdc.org

For information on toxic art supplies and labeling requirements, refer to:

The Center for Safety in the Arts
web site: http://artswire.org:70/1/csa
open the Art Hazards Menu

Publications

Art and Creative Materials Institute, What You Need to Know About The Safety of Art and Craft Materials, Art and Creative Materials Institute, Inc., 1996.
Jacobson, L., Children's Art Hazards, Natural Resources Defense Council, 1984

Part III: Controlling Pests in the House, Lawn and Garden

Organizations/Companies

Bio-Integral Resource Center
PO Box 74141
Berkeley, CA 94707
(510) 524-2567
fax: (510) 524-2567
birc@igc.org
www.igc.org/birc

Ecology Action
5798 Ridgewood Rd.
Willits, CA 95490
(707) 459-0150
fax: (707) 459-5409
bountiful@zapcom.net
www.solstice.crest.org/sustainable/ecology_action

Beyond Pesticides /NCAMP
701 East St., SE, Suite 200
Washington, DC 20003
(202) 543-5450
fax: (202) 543-4791
ncamp@ncamp.org
www.ncamp.org

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Northwest Coalition for Alternatives to Pesticides (NCAP)
PO Box 1393
Eugene, OR 97440
(540) 344-5044
fax: (540) 344-6923
ncap@igc.apc.org

Pesticide Action Network North America (PANNA)
116 New Montgomery St., Suite 810
San Francisco, CA 94105
(415) 541-9140
fax: (415) 541-9253
panna@panna.org
www.panna.org

Publications

Jeavons, J., *How to Grow More Vegetables*, Ten Speed Press, 1997.
Olkowski, W., Daar, S. and Olkowski, H., *Common Sense Pest Control*, The Taunton Press, 1991.
Uhler, Bob, "Lawn Care Without Pesticides," *Journal Of Pesticide Reform*, Summer 1992, Vol. 12, no. 2, pp. 38-39.

Part IV: Food and Water Organizations/Companies

California Certified Organic Farmers
1115 Mission St.
Santa Cruz, CA 95060
(408) 423-2263
fax: (408) 423-4528
ccof@igc.apc.org
www.ccof.org

Community Alliance for Family Farmers
PO Box 363
Davis, CA 95617
(916) 756-8518
(800) 852-3832
(916) 756-8518 x 26
fax: (916) 756-7857
nod@caff.org
www.caff.org

Mothers and Others for a Livable Planet
40 West 20th St., 11th Floor
New York, NY 10011
(212) 242-0010
fax: (212) 242-0545
mothers@mothers.org
greenguide@mothers.org
www.mothers.org/mothers

Beyond Pesticides/NCAMP
701 East St., SE, Suite 200
Washington, DC 20003
(202) 543-5450
fax: (202) 543-4791
ncamp@ncamp.org
www.ncamp.org

Natural Resources Defense Council (NRDC)
40 West 20th St.
New York, NY 10011
(212) 727-2700
fax: (212) 727-1773
nrdcinfo@nrdc.org
www.nrdc.org

National Sanitation Foundation
3475 Plymouth Rd.
PO Box 1468
Ann Arbor, MI 48106
(313) 769-8010
fax: (313) 769-0109
info@nsf.org
www.nsf.org

National Testing Laboratories
6555 Wilson Mills, Suite 102
Cleveland, OH 44143
(800) 458-3330
fax: (404) 449-8885
www.watercheck.com

Northwest Coalition for Alternatives to Pesticides (NCAP)
PO Box 1393
Eugene, OR 97440
(540) 344-5044
fax: (540) 344-6923
ncap@igc.apc.org

Pesticide Action Network North America (PANNA)
116 New Montgomery St., Suite 810
San Francisco, CA 94105
(415) 541-9140
fax: (415) 541-9253
panna@panna.org
www.panna.org/panna/

Water Quality Association
4151 Naperville Rd.
Lisle, IL 60532
(630) 505-0160
fax: (630) 505-9637
www.wqa.org

Publications

Cohen, B., Wiles, R. and Bondoc, E., *Weed Killers by the Glass: A Citizens' Tap Water Monitoring Project in 29 Cities,* Environmental Working Group/The Tides Foundation, 1995.

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Part V: Disposal Organizations/Companies

Resource Conservation Recovery Act(RCRA)/Underground Storage Tanks, Superfund, and Emergency Planning and Community Right-to-Know Act Hotline (a service of the US EPA).
(800) 424-9346
www.epa.gov/epaoswer/hotline

Notes:

Afterward

As we journey into the new millennium, we are faced with a rapidly increasing population and a limited supply of natural resources. We must ask ourselves, what will become of our children and their children's children. We must all do our part as parents and guests upon Mother Earth, to ensure that the following generations have a sustainable future — clean air, water, and food, something that we have all, until now, taken for granted.

Olivia Newton-John

Olivia Newton-John, one of the most popular and successful singers in history, is the National Spokesperson for the Children's Health Environmental Coalition (CHEC). An inspirational environmental advocate, she also served as Goodwill Ambassador to the United Nations Environmental Programme. She is a personal friend of Nancy and Jim Chuda and godmother to their only child, Colette. Ms. Newton-John is author of the environmental children's story, A Pig Tale , and is a survivor of breast cancer. She has been repeatedly honored for her efforts in the fight against this disease.

A Call To Action!
What Should I Do Next?

Support CHEC!

By supporting CHEC, you will learn how environmental toxins effect the health of children and what you can do to protect our children's future. We provide educational information through the CHEC web site, CHEC Report, and other materials and activities. Your contribution will enable us to impact the health of children all over the world.

Please make check payable to CHEC and send to:

Children's Health Environmental Coalition
P.O. Box 1540, Princeton, NJ 08542

phone: (609) 252-1915
email: chec@checnet.org
web: www.checnet.org

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Visit our web site www.checnet.org for current information on children's environmental health issues.
Our column, *Moms and Dads in the Trenches (MADIT)*, gives you access to the experiences of other parents. Join the CHEC Forum to participate in the information exchange between members.

Become active in your local community.
Contact CHEC for materials and ideas on how to get the ball rolling in your own community.

Children's Health Environmental Coalition

P.O. Box 1540
Princeton, NJ 08542
Ph: (609) 252-1915
Fax: (609) 252-1536
chec@checnet.org
www.checnet.org

48